GOAL 4: Healthy Communities and Ecosystems

Protect, sustain, or restore the health of people, communities, and ecosystems using integrated and comprehensive approaches and partnerships.

EPA's work to achieve healthy communities and ecosystems encompasses a variety of programs and projects across the Agency and relies on both regulatory and collaborative approaches. To accomplish its objectives under Goal 4, EPA screens and manages chemicals and pesticides, restores and redevelops contaminated properties and communities, works to make America's most significant water bodies safe for swimming and fishing, and conducts cutting-edge research to bring the best scientific expertise to bear on the nation's environmental challenges.

Chemicals and Pesticides

EPA is committed to preventing risks from new chemicals and pesticides entering the environment, as well as to addressing legacy issues from old bad actors. The Agency reviews new chemicals and pesticides before they are put on the market, reassesses older chemicals and pesticides already in use, and takes appropriate action should they pose unacceptable risks. EPA has now screened over 22 percent of the more than 76,000 commercial and/or industrial chemicals in the U.S. inventory.[1]

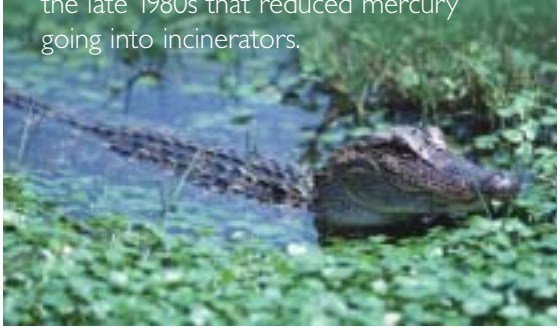
Washington State Tests Pesticide-Exposed Workers

The Washington Departments of Agriculture, Health, and Labor and Industries tested farm workers to determine their cholinesterase levels. Certain pesticides may lower the normal protective levels of cholinesterase, affecting the nervous system and causing symptoms from headaches, blurred vision, and diarrhea to breathing difficulties and death in severe cases. Testing can detect levels of concern prior to the onset of symptoms. As of June 2004, about 2,600 pesticide-exposed workers were tested, and 27 farm workers had severely depressed cholinesterase levels and needed to avoid further exposure.

Recent studies have raised concerns about the toxicological risks presented by certain commercial or industrial chemicals. Perfluorooctane sulfonate, for example, has been documented to be extensively distributed and persistent in humans and wildlife. And household and industrial applications for many such organic fluorochemicals are increasing: perfluorooctanoic acid is used in surfactant coatings for fabrics and paper products, fire-fighting foams, electronic etching baths, and insecticides. In addition, brominated fire retardants (BFRs) are widely used in consumer products to prevent fire-related injury and property damage. Recently, polybrominated diphenyl ethers (PBDEs), a type of BFR, were found to be persistent in the environment and capable of accumulating in animal, fish, and human tissue.

Mercury Contamination: How Effective are Regulations?

In November 2003, Dr. Thomas Atkeson presented the results of a decade-long study of regulatory efforts to reduce local and regional mercury emissions. Sponsored by the Florida Department of Environmental Protection and EPA, the study found that regulatory efforts translated into dramatic environmental benefit, particularly for high methylmercury-contaminated areas.[4] From 1991–99, mercury emissions in south Florida declined by 92 percent, and mercury levels in Everglades' wildlife declined by 60–70 percent. The declines are associated with state and federal regulatory efforts taken in the mid-1990s to address outdated municipal and medical waste incinerators in south Florida and pollution prevention efforts taken in the late 1980s that reduced mercury going into incinerators.



A major research effort is underway to determine whether PBDEs pose a health risk to humans.[2]

Increasingly, newer chemicals are being substituted for older chemicals that present known risks. In 2004, EPA provided tools that enable industry to "pre-screen" new chemicals for adverse effects early in their development, thereby saving costs, promoting stewardship, and enhancing environmental protection. EPA also accelerated the review of older chemicals, to date recording active test development for 2,200 high-production-volume chemicals, or 92 percent of those with incomplete hazard screening data.[3]

Similarly, new pesticides are being registered that provide alternatives to older, often riskier pesticides. In 2004, EPA met new standards for efficiency and new deadlines under the Pesticide Registration Improvement Act of 2003, allowing innovative and safer pesticide products to reach the marketplace quickly. During 2004, for example, EPA registered a new active ingredient alternative for methyl bromide, a substance that is known to deplete the ozone layer and is scheduled for phase-out. The deadline for reassessing all 9,721 tolerances for older pesticides is less than 2 years away; EPA has now completed over 69 percent of the reassessments, greatly increasing the safety of America's food supply.

EPA is also making progress in protecting children's health. For example, follow-on actions to changes in the registration for one older pesticide, chlorpyriphos, have reduced its use by 50 percent, virtually eliminating it from

Indiana Department of Environmental Management Makes $1,000,000 Loan To Clean Up Frederickson Park Landfill

The City of South Bend borrowed $1,000,000 from the Indiana Department of Environmental Management's Brownfields Cleanup Revolving Loan Fund program to assist with costs incurred in cleaning up the 16-acre Frederickson Park Landfill, which accepted wastes from the 1930s to the early 1970s. The City of South Bend plans to redevelop the site into the Frederickson Park Environmental Education Center to enrich the city's environmental stewardship programs. The redevelopment project has been a cooperative effort between the city, the University of Notre Dame, South Bend's Community School Corporation, and local neighborhood organizations.

areas where children may be exposed, such as residences, schools, and parks. The incidence of childhood lead poisoning has been halved since the early 1990s.[5] In 2004, EPA began to focus its outreach and evaluation efforts on remaining "hot spots," which are often disadvantaged urban areas, where the incidence of childhood lead poisoning remains high.

Restoring Communities

In addition to preventing potential new risks to the environment, EPA is working to protect and restore communities affected by past contamination. The Agency provides states, tribes, local governments, and stakeholders with the tools and financial assistance they need to assess, clean up, and redevelop brownfields properties. In 2004, EPA awarded $69.3 million in brownfields grants in 42 states and Puerto Rico. The grants included 150 Assessment Grants, 15 Revolving Loan Fund Grants, 16 Job Training Grants, and 75 Cleanup Grants. In 2004, EPA also distributed $49.7 million among all 50 states, the District of Columbia, 3 territories, and 40 tribes to develop or enhance the infrastructure and capabilities of their response programs. From 1995 through March 2004, EPA grantees assessed 4,880 brownfields properties, leveraging $6.6 billion in clean up and redevelopment funding and 29,600 jobs. Additionally EPA has conducted 1,167 targeted brownfields assessments.

Community and Geographical Initiatives

EPA collaborates with other nations; state, tribal, and local governments; and community groups, industry, and other stakeholders to address geographic and local issues.

More than 30 million people live in the Great Lakes basin, and their daily activities—from water consumed to waste returned—directly affect Great Lakes environments. On May 18, 2004, President Bush signed an Executive Order directing

Administrator Leavitt to establish the Great Lakes Federal Task Force, comprising nine Cabinet members, the Army Corps of Engineers, and the Council on Environmental Quality, to coordinate the federal effort to improve water quality in the Great Lakes. The Order calls for regional

Administrator Leavitt heads Great Lakes Federal Task Force

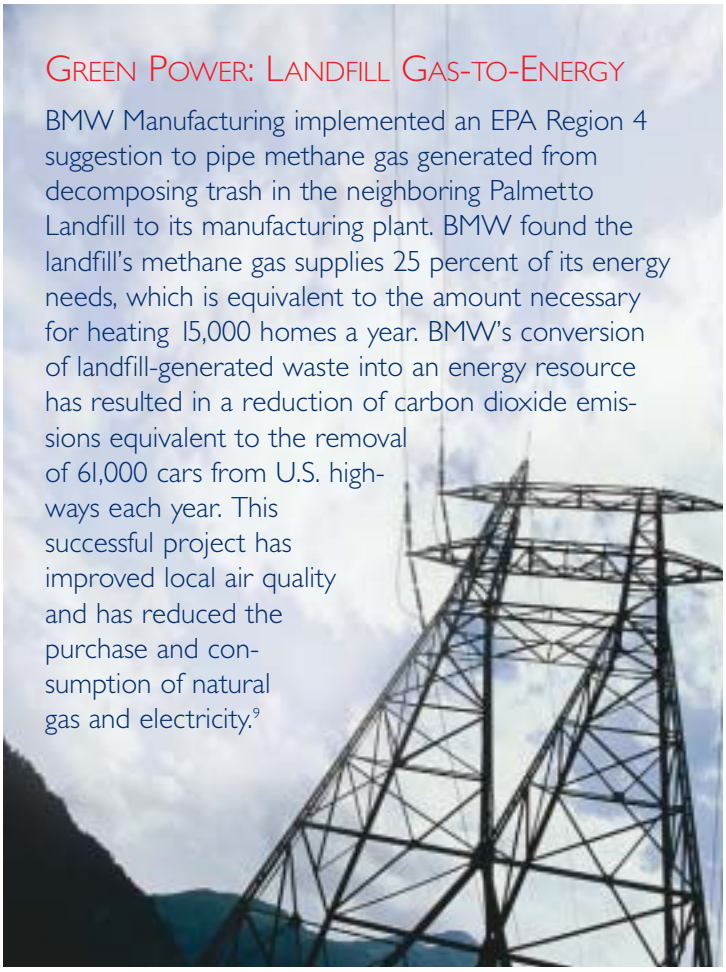
collaboration to develop action plans that address priorities, identify resource needs, develop an implementation schedule, and facilitate a cohesive management process.[6]

The health of the nation's estuaries depends in part on maintaining high-quality habitat. In FY 2004, EPA protected and restored over 107,000 acres of estuarine habitat within the 28 estuaries of the National Estuary Program (NEP),[7] helping these estuaries to support healthy populations of wildlife and marine organisms and to perform

the economic, environmental, and aesthetic functions on which coastal populations depend for their livelihood. In 2004, the President announced an aggressive new national goal to achieve an overall increase in America's wetlands: over the next 5 years, 6,000 acres of restoration and 6,000 acres of enhancement (an average of 1,200 acres per

107,000 acres of estuarine habitat protected

year in each category).[8] EPA believes that emphasizing aquatic habitat protection through such mechanisms as the NEP, nonpoint source management, source water protection, and watershed management, will enable us to achieve this goal. EPA is also committed to improving wetland-tracking systems to accurately report wetland acres enhanced and restored.



Green Power: Landfill Gas-to-Energy

BMW Manufacturing implemented an EPA Region 4 suggestion to pipe methane gas generated from decomposing trash in the neighboring Palmetto Landfill to its manufacturing plant. BMW found the landfill's methane gas supplies 25 percent of its energy needs, which is equivalent to the amount necessary for heating 15,000 homes a year. BMW's conversion of landfill-generated waste into an energy resource has resulted in a reduction of carbon dioxide emissions equivalent to the removal of 61,000 cars from U.S. highways each year. This successful project has improved local air quality and has reduced the purchase and consumption of natural gas and electricity.[9]

As a result of wet weather in 2003, EPA intensified efforts to reduce nutrient and sediment pollution in Chesapeake Bay.

In Chesapeake Bay in 2003, EPA measured 64,709 acres of submerged aquatic vegetation (SAV), an important habitat for aquatic life and an indicator of the Bay's health. Record wet weather washed massive amounts of nutrients and sediment into the Bay, resulting in a 30 percent decline in SAV in a single year. To achieve a goal of 185,000 acres of SAV by 2010, EPA will intensify efforts to reduce nutrient and sediment pollution. In 2004, EPA also led efforts to develop an integrated, regional Gulf of Mexico Coastal Ocean Observing System; to develop a plan for detecting, predicting, and forecasting harmful algal blooms in the Gulf of Mexico; and to facilitate access to and exchange of Gulf data.

International Activities

In 2004, EPA made significant progress toward reducing risks to human health and the environment internationally, initiating work on lead reduction and air monitoring. For example, the Agency is on target to

Seven more countries phased out leaded gasoline—On track to phase out leaded gasoline worldwide by 2008.

achieve the worldwide phase-out of leaded gasoline by 2008.[10] On the African continent, Cape Verde, Ethiopia, Ghana, Mauritius, Mauritania, Nigeria, and Rwanda have phased lead out of their gasoline, reducing the exposure of more than 117 million people to

Stockpiles of Used Tires along the U.S.–Mexico Border

Along the U.S.-Mexico Border, massive stockpiles of waste tires pose health risks to people living in surrounding communities. The tires represent a significant waste management problem, offering breeding grounds for mosquitoes, rodents, and other disease carriers and causing severe air quality issues when noxious fumes emitted from the piles ignite. Under the Border 2012 Program, EPA and the Mexican government are working jointly to reduce land contamination by eliminating three major tire stockpiles by 2012. They have reached an agreement to dispose of 800,000 used tires per year over the next 5 years in environmentally safe cement kilns in the Juarez area, providing an alternative source of energy (tire-derived fuel). In addition, more tires will be crumbled for alternative uses such as road paving. Reusing waste tires eliminates the stockpiles and reduces health risks while making productive use of this material.

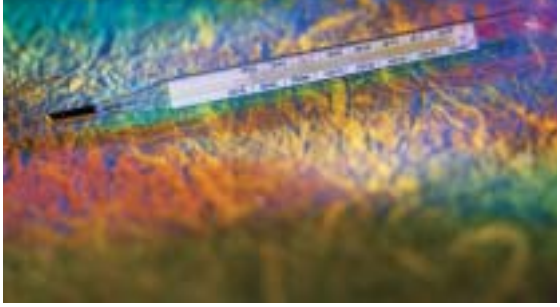
the toxic effects of lead. Under another collaborative international effort, EPA worked with the California Air Resources Board and the India Ministry of Environment and Forests to develop a detailed inventory of air emissions for Pune, India, where dangerously high levels of particulate matter are endangering the health of Pune's 2.5 million inhabitants. The Pune emission inventory represents a critical step in developing effective strategies for reducing air pollution, and it is serving as a model for two of India's largest cities, Kolkata and Mumbai, which together are home to 29.6 million inhabitants.[11]

Science and Research

EPA continues to break new scientific ground in the area of biomarkers, indicators that can be used to measure the exposure or effects of environmental agents. With the Centers for Disease Control, EPA is funding a National Academy of Sciences report on biomonitoring that will identify key principles and uncertainties in estimating and interpreting health risks from environmental contaminants. To support the Agency's Report on the Environment, EPA research also identified human health and environmental indicators for measuring environmental progress.[12] Many of the environmental indicators used in the Report on the Environment were derived from EPA's Environmental Monitoring and Assessment Program, which pioneered the concept of probabilistic, statistically valid monitoring using a set of consistent indicators.[13]

Hospitals for a Healthy Environment

Working under an FY 2002 Pollution Prevention demonstration grant from Region 5, the Minnesota Technical Assistance Program (MnTAP) used tools developed by the Hospitals for a Healthy Environment Program (H2E), including Chemical and Solid Waste Minimization Plans, to demonstrate the effectiveness of pollution prevention at health care facilities. As a result of MnTAP's work, at least 34 Minnesota healthcare facilities (22 percent of Minnesota hospitals) are engaged in documented P2 efforts. Thirteen facilities have signed on as H2E partners, and 29 have eliminated 75 percent of their mercury or working toward that goal. These facilities have eliminated 394 pounds of mercury, 851 gallons of hazardous chemicals, and 250,000 pounds of solid waste, and they have saved $152,600.



Safely Managing Obsolete and Prohibited Pesticides in the Arctic

EPA and Arctic Nations have established a cooperative project to address stockpiles of obsolete and prohibited pesticides in the Arctic. A part of the Arctic Council Action Plan, this international project is assisting Russia in managing its extensive stocks (over 35,000 metric tonnes) of Soviet Era obsolete and prohibited pesticides in an environmentally safe manner. Many of these stockpiled pesticides are migrating great distances; pesticides have been found in Alaska, affecting indigenous peoples' subsistence foods.[14]

Arkhangelsk, located at the Arctic Circle on the White Sea, served as the demonstration region for the project. By the completion of this demonstration project in 2004, all 63 metric tonnes of Arkhangelsk's stock of obsolete pesticides had been inventoried, analyzed for heavy metals and chlorinated compounds, repackaged, and moved to safe temporary storage awaiting destruction. The Arkhangelsk model is being implemented in ten other Arctic regions.

Federal, state, and local emergency personnel also rely on EPA to develop approaches that will aid decision making in the event of a terrorist attack. In 2004, EPA research scientists and engineers developed information and tools to help detect the intentional introduction of chemical or biological contaminants in buildings or water systems, contain these contaminants, decontaminate buildings and/or water systems, and dispose of material after cleanups. EPA also assessed the vulnerabilities and technical challenges facing the water industry. The Water Security Research and Technical Support Action Plan, released in 2004, focuses on protecting water systems from threats by identifying contaminants in drinking water systems and developing effective decontamination products and options for disposal.[15] The plan also presents information on risks and potential impacts on human health.

Goal 4: Healthy Communities and Ecosystems

Annual Performance Goals Met:	12
Annual Performance Goals Not Met:	7
Data Available After 11/5/04:	4

FY2004 Obligations (in thousands):		FY2004 Costs (in thousands):	
EPA Total:	$10,155,381	EPA Total:	$8,837,375
Goal 4:	$1,212,345	Goal 4:	$1,143,190
Goal 4 Share of Total:	11.9%	Goal 4 Share of Total:	12.9%

Strategic Objective: Prevent and reduce pesticide, chemical, and genetically engineered biological organism risks to humans, communities, and ecosystems. FY 2004 Cost (in thousands): $417,571 (36.5% of FY 2004 Goal 4 Total Costs)

Progress Toward Strategic Objective: EPA uses a wide range of approaches to preventing and reducing risks from chemicals. More than 76,000 chemicals are identified in the TSCA chemical inventory, and they impact every aspect of our daily life. Pesticides are applied to food, or people may be exposed to them through the workplace or at home. EPA reviews every new chemical or pesticide that enters the marketplace.

At the end of 2004, EPA is on track to complete long-term goals for reviewing every pesticide tolerance needing reassessment, as well as all reregistrations. Organophosphate residues and poisonings are decreasing as a result of actions and outreach on the use of alternatives to these older, riskier pesticides. New registrations also reduce potential risk. One example is a biopesticide registered in 2004 to be used against mosquito larvae in aquatic environments. It helps protect the public from disease such as the West Nile Virus; it also avoids the potential for polluting surface water while controlling mosquitoes. EPA continues to seek means to reduce review cycles for its regulatory decisions, thus making newer, less risky pesticides accessible to the public quicker and in greater quantity. For example, in 2004 the pesticides program revised the review process for health risk assessments, flagging resource intensive and/or low risk chemicals early in the process and reducing multiple critical decision points.

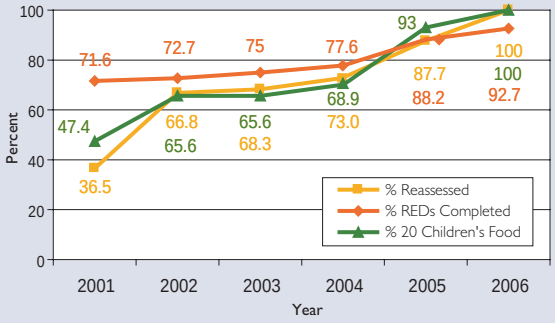
Chemicals that have been on the marketplace since before EPA reviews began—a bit more than 75% of the total—must also be screened for potential risks. EPA exceeded 2004 targets for closing the gap in publicly available risk screening data for more than 2,200 chemicals produced or imported in quantities of 1 million pounds per year and substantially expanded knowledge of the risks associated with chemicals encountered in everyday life, such as flame retardants and fabric protectors. New tools and processes are making it more efficient to reduce the adverse effects from older chemicals and contaminants already in the environment—things like lead and polychlorinated biphenyls (PCBs). For instance, successful pilot efforts in 2004 to make innovative use of available data sets to target hot spots with high concentrations of cases offer encouragement that EPA and government-wide goals for eliminating incidences of lead poisoning by 2010 will be achieved. Revamping strategies to meet the changing landscape of who's at risk, economic pressures on the affected industry and other evolving factors pave the way for smart and effective action to reduce such risks using the expanding arsenal of regulatory and voluntary tools.

APG 4.1	Review Pesticide Active Ingredients	Planned	Actual
FY 2004	Ensure that through on-going data reviews, pesticide active ingredients and the products that contain them are reviewed to assure adequate protection for human health and the environment, taking into consideration exposure scenarios such as subsistence lifestyles of Native Americans. Goal Not Met.		
	Performance Measures:		
	—Product Reregistration.	400 actions	127

APG 4.1 Review Pesticide Active Ingredients *(continued)*		Planned	Actual
FY 2004	—Reregistration Eligibility Decision (RED) (cumulative).	81.7%	77.6%
	—Tolerance Reassessment (cumulative).	78%	73.0%
	—Tolerance Reassessments for top 20 foods eaten by children (cumulative).	83%	68.9%
	—Number of inert ingredients tolerances reassessed.	100	28
FY 2003	Assure that pesticides' active ingredients registered prior to 1984 and the products that contain them are reviewed to assure adequate protection for human health and the environment. Also consider the unique exposure scenarios such as subsistence lifestyles of Native Americans in regulatory decisions. Goal Not Met.		
	Performance Measures:		
	—Product Reregistration.	350 actions	306
	—Reregistration Eligibility Decision (RED) (cumulative).	76%	75%
	—Tolerance Reassessment.	68%	68%
	—Tolerance reassessments for top 20 foods eaten by children.	75%	65.6%
FY 2002	Same goal, different targets. Goal Not Met.		
	Performance Measures:		
	—Product Reregistration.	750	314
	—RED (cumulative).	76.4%	72.7%
FY 2002	By the end of 2002 EPA will reassess a cumulative 66% of the 9,721 pesticide tolerances required to be reassessed more than 10 years. This includes 67% of the 893 tolerances having the greatest potential impact on dietary risks to children. Goal Met.	66% 67%	66.9% 65.6%
FY 2001	Same goal, different targets. Goal Not Met.	40% 46%	40% 44%

FY 2004 Result: The Agency did not meet its FY 2004 targets for this goal. Measurements for REDs ; tolerance reassessments; tolerance reassessments for the top 20 foods eaten by children; and the number of inert ingredients with tolerances reassessed began in 1996 when FQPA became effective. The Pesticide Registration Improvement Act (PRIA) of 2003, which became effective on March 23, 2004 stipulates that the universe of 612 REDs be completed by October 2008 and product reregistrations by 2010. Tolerance reassessments, with a universe of 9,721, have a statutory deadline for completion in August 2006.

Performance Measure: % Tolerance Reassessment and Tolerance Reassessments for Top 20 Foods Eaten by Children Completed (Cumulative) and % Registration Eligibility Decisions Completed (Cumulative)



Product reregistrations are based on the REDs completed in previous years. Product reregistrations are generally completed 2 years after the RED is done. EPA has not met its REDs targets in earlier years, therefore it did not meet its product reregistration targets for FY 2004. It should also be noted that the previously reported planned target of 750 actions for product reregistrations is in error; the target, which is an estimate, should have been 400. Additionally, determining a target is difficult because there is no fixed target for products eligible for reregistration because the number of products that need registration/reregistration changes with each request for registration, and with each action taken in reregistration. For example, if there is a request for a new use for a product, or if a RED is issued to reregister a pesticide, then the associated products become eligible for reregistration, thereby changing the universe of products eligible for reregistration.

APG 4.1 Review Pesticide Active Ingredients *(continued)*

Despite having not met its targets in previous years, the Agency is committed to meeting its 2008 deadline. The reregistration program is continuing to review data and issue REDs while examining means to streamline activities and consolidate resources.

In FY 2004, EPA completed 17 REDs for a cumulative total of 475 REDs completed. The Agency is on track to complete all 612 REDs to meet its 2008 statutory deadline.

In FY 2004, EPA reassessed 467additional tolerances for a cumulative total of 7,093 tolerance reassments completed. The Agency is on track to complete all 9,721 tolerances to meet its 2006 statutory deadline. Meeting this goal will help ensure that human health and the environment are protected from the harmful effects of pesticides, and that food remains safe for consumption. Children's tolerances are a smaller subset of the broader category of tolerances. In FY 2004, the Agency reassessed 23 children's tolerances, meeting 68.9% of its planned target of 893. To date, 615 children's tolerances have been reassessed.

In FY 2004, EPA reassessed 28 inert ingredients tolerances/tolerance exemptions. To date 445 have been reassessed. The Agency is on track to complete all 870 inert ingredient tolerances to meet its statutory 2006 deadline.

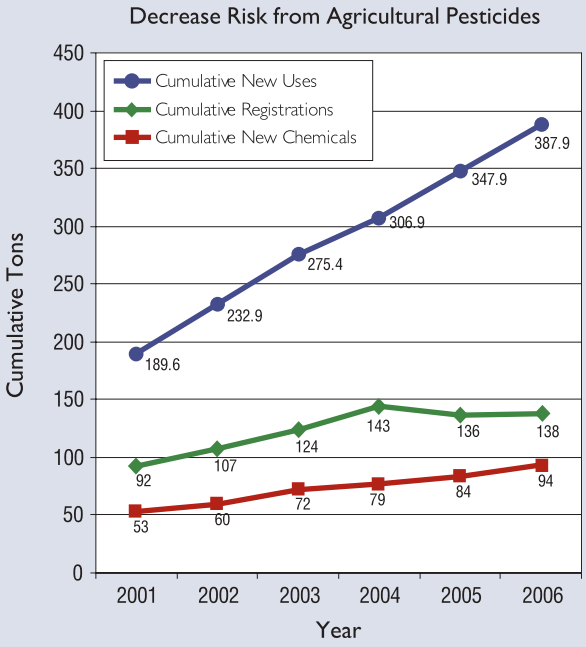
A description of the quality of the data used to measure EPA's performance can be found in Appendix B, pages 33-34.

APG 4.2 Decrease Risk from Agricultural Pesticides		Planned	Actual
FY 2004	**Decrease adverse risk from agricultural uses from 1995 levels. Goal Not Met.**		
	Performance Measures:		
	—Register safer chemicals and biopesticides (cumulative).	**131**	**143**
	—New Chemicals (cumulative).	**74**	**79**
	—New Uses (cumulative).	**3,079**	**3,142**
	—Percentage of acre-treatments with reduced risk pesticides.	**8.5%**	**Data avail 12/04**
	—Occurrences of residues on a core set of 19 foods eaten by children relative to occurrence levels for those foods reported in 1994-1996.	**25%**	**34%**
FY 2003	Decrease adverse risk from agricultural uses from 1995 levels and assure that new pesticides that enter the market are safe for humans and the environment through ensuring that all registration actions are timely and comply with standards mandated by law. Goal Not Met.		
	Performance Measures:		
	—Register safer chemicals and biopesticides (cumulative).	118	124
	—New Chemicals.	67	72
	—New Uses.	350	425
	—Percentage of acre treatments with reduced risk pesticides.	8.1%	8.0%
	—Occurrences of residues on a core of 19 foods eaten by children relative to occurrence levels for those foods reported in 1994-1996.	20%	34.3%
FY 2002	Same goal, different targets. Goal Met.		
	Performance Measure:		
	Register safer chemicals and biopesticides (cumulative).	105	107
FY 2002	Detections of residues of carcinogenic and cholinesterase inhibiting neurotoxic pesticides on foods eaten by children will have decreased by 15% (cumulative) from their average 1994 to 1996 levels. Goal Met.	15%	20%

APG 4.2 Decrease Risk from Agricultural Pesticides *(continued)*		Planned	Actual
FY 2002	At least 1% of acre-treatments will use applications of reduced risk pesticides. Goal Met.	1%	7.5%
FY 2001	Same goal, different targets. Goal Not Met.		
	Performance Measure:		
	Register safer chemicals and biopesticides.	96	92

FY 2004 Result: The baseline is zero for registration of reduced risk pesticides, new chemicals, and new uses, beginning in 1996, the year FQPA was enacted. Progress is measured cumulatively since 1996. The baseline for acres-treated is 3.6% of total acreage in 1998, when the reduced-risk pesticide acre-treatments was 30,332,499 out of a total (all pesticides) of 843,063,644 acre- treatments. Each year's total acre-treatments, reported by Doane Marketing, Inc. with USDA's National Agricultural Statistical Survey serve as the basis for computing the percentage of acre- treatments using reduced risk pesticides. Acre-treatments count the total number of pesticide treatments each acre receives each year. Information on the percentage of acre-treatments will be analyzed and available by December 2004. The baseline for residues on children's foods is the occurrence on 33.5% of composite sample of children's foods in the baseline years 1994- 1996. FY 2003 results were not known in time to adjust the FY 2004 target. After 2 years of experience in analyzing the data, the measure has been determined to be too general with too many variables from year to year in order to provide a consistent, reliable trend. Information is being reviewed to determine a more appropriate measure.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, pages 34-35.



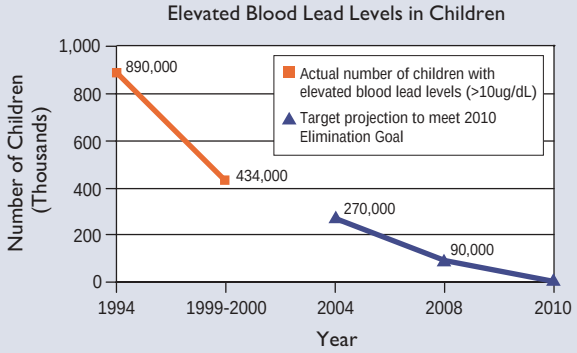
FY 2003 Result Available in FY 2004: EPA missed its FY 2003 goal. Actual detections of pesticide residues on foods eaten by children went up (from 33.1% in 2002 to 34.3% in 2003), however, it is unclear whether this is due to the different foods analyzed, number of samples analyzed, pesticides analyzed for, or a combination of all variables. Information is being reviewed to determine a more appropriate measure. The slight miss on acre treatments had no effect on overall program activity or performance.

APG 4.3 Exposure to Industrial/Commercial Chemicals		Planned	Actual
FY 2004	Reduce exposure to and health effects from priority industrial/ commercial chemicals.		
	Performance Measures:		
	—Certified nationally to perform lead-based paint abatement.	18,000	24,000
	—Children aged 1-5 years with elevated blood lead levels (>10ug/dl).	270K	Data avail 2005
	—Safe disposal of transformers.	8,000	Data avail 2006
	—Safe disposal of capacitors.	6,000	Data avail 2006
	—Number of participants in Hospitals for a Healthy Environment (cumulative).	2,000	2,930
FY 2003	Reduce lead exposure in housing units and in the deleading of bridges and structures. Goal Met.		
	Performance Measure:		
	Certified nationally (federally-administered and state-administered program).	5,000	5,561

APG 4.3 Exposure to Industrial/Commercial Chemicals *(continued)*		Planned	Actual
FY 2002	Implement certification and training of lead abatement professionals. Goal Met.		
	Performance Measure:		
	Certified nationally (federally-administered and state-administered program).	4,000	4,574

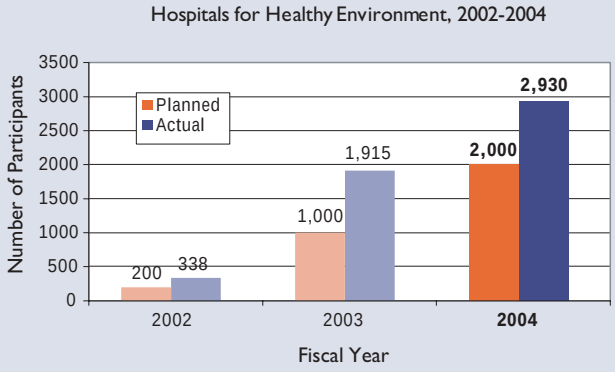
FY 2004 Result: EPA substantially exceeded its goal of certifying national users to perform lead-based paint abatement.

National Health and Nutrition Examination Survey (NHANES) data are currently released in two year data sets. 1999-2000 NHANES data, released in January 2003, estimated 434,000 children with elevated blood lead levels, a steep reduction of the estimate of more than 900,000 cases in the early 1990s. EPA expects to be able to update this estimate through 2002 in 2005, providing additional evidence of progress towards the government-wide goal of virtually eliminating childhood lead poisoning by 2010.



CY 2004 data will not be available until mid-2006. Recently released 2002 data indicate a continuation of an improving trend. EPA is nonetheless expanding efforts to promote voluntary early retirement of high concentration PCB transformers to reduce the risks of exposure through accidents and equipment breakdowns.

CY 2004 data will not be available until mid-2006. CY 2002 results were released in January 2004. The figures show a total of 2,204 large capacitors safely disposed of annually. CY 2003 results will not be reported until 2005. The current industrial disposals, downward trend is of concern and is under investigation. Investigations are being made into data quality issues. Additionally, successful pilot programs are being scaled up to retire PCB containing equipment.



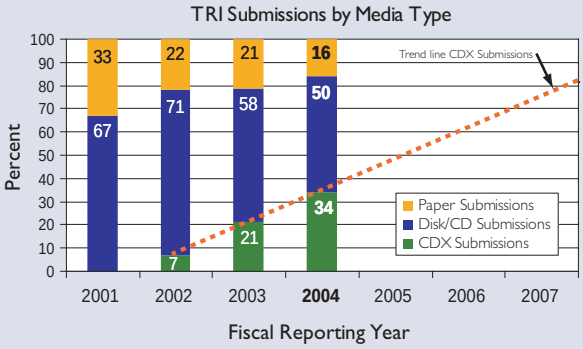
Participation in the H2E program throughout the healthcare sector continued to increase, exceeding expectations for 2004. Increased participation in H2E improves environmental results through reduced use of mercury and reduced generation of mercury-containing healthcare and total healthcare waste.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, pages 35-36.

APG 4.4 Process and Disseminate Toxics Release Inventory (TRI) Information		Planned	Actual
FY 2004	The increased use of the TRI-Made Easy (TRI-ME) will result in a total burden reduction of 5% for Reporting Year 2003 from Reporting Year 2002 levels. Goal Not Met.	50%	36%
	Performance Measure:		
	Percentage of TRI chemical forms submitted over the Internet using TRI-ME and the CDX.	50%	38%
FY 2003	Expanded information on releases and waste management of lead and lead compounds will be reported by 8,000 facilities in TRI in Reporting Year 2001 and increased usage of TRI-ME will result in total burden reduction of 25% for Reporting Year 2002. Goal Met.	8,000 25%	8,561 25%

APG 4.4 Process and Disseminate Toxics Release Inventory (TRI) Info. *(continued)*		Planned	Actual
FY 2002	EPA will reduce reporting burden, improve data quality, lower program costs, and speed data publication by increasing the amount of TRI electronic reporting from 70% to 85%. Goal Met.	85%	92%
FY 2001	Process all submitted facility chemical release reports; publish annual summary of TRI data; provide improved information to the public about TRI chemicals; and maximize public access to TRI information. Goal Met.		
	Performance Measures:		
	—TRI Public Data Release.	1 report	1 report
	—Chemical submissions and revisions processed.	110,000	120,000

FY 2004 Result: Information on toxic chemical releases is needed to assist communities in making informed decisions about protecting their environment. In June 2004, the Agency released the Toxics Release Inventory (TRI) annual Public Data Release (PDR) report that contains information on toxic chemical releases and other waste management activities by certain industries, as well as by federal facilities. EPA is continuing to focus resources on modernization of TRI data collection, processing, and dissemination processes with the goal of releasing more reliable information sooner to all communities. As an aid to the reporting community and to improve data collection accuracy and efficiency, EPA introduced TRI-Made Easy (TRI- ME) software in FY 2001. In FY 2004, 92% of all reporting facilities used TRI-ME to prepare their submissions. Comparing FY 2004 to FY 2003, there was a 50% increase in the number of reports on chemical releases and other waste management data submitted to EPA via the internet and EPA's Central Data Exchange (CDX). However, even with this sizable increase, only 36% of all chemical forms were submitted using CDX, short of the FY 2004 goal of 50%. EPA is aggressively working to increase the CDX submissions through various efforts such as targeted training and outreach to the reporting community.



A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 43.

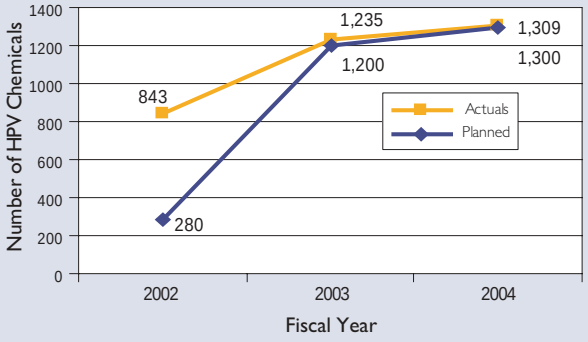
APG 4.5 Risks from Industrial/Commercial Chemicals		Planned	Actual
FY 2004	Identify, restrict, and reduce risks associated with industrial/commercial chemicals.		
	Performance Measures:		
	—TSCA pre-manufacture notice reviews (annual).	1,700	1,377
	—Number of Notice of Commencements (NOCs) received as percentage of total number of chemicals in TSCA inventory (cumulative).	22.6%	22.8%
	—Make screening level health and environmental effects data publicly available for sponsored HPV chemicals (cumulative).	1,300	1,309
	—Annual number of TSCA Section 5 Pre-Manufacturer Notices (PMNs) received self-audited using complete battery of P2 Framework/PBT Profiler screening tools.	40	71
	—Reduction in current year production-adjusted risk screening environmental indicators risk-based score of releases and transfers of toxic chemicals.	2%	Data avail 2006
	—Cumulative number of chemicals for which AEGL values proposed.	128	134
	—High Production Volume chemicals with complete Screening Information Data Sets (SIDS) submitted to OECD SIDS Initial Assessment Meeting (annual).	75	98

APG 4.5 Risks from Industrial/Commercial Chemicals *(continued)*		Planned	Actual
FY 2003	Of the approximately 1,800 applications for new chemicals and microorganisms submitted by industry, ensure those marketed are safe for humans and the environment. Increase proportion of commercial chemicals that have undergone pre-manufacture notice review to signify they are properly managed and may be potential green alternatives to existing chemicals. Goal Met.	1,800	1,633
FY 2002	Same goal. Goal Met.	1,800	1,943
FY 2001	Same goal. Goal Met.	1,800	1,770
FY 2003	Provide information and analytical tools to the public for accessing the risk posed by toxic chemicals. Goal Met. ***Performance Measure:*** Make existing screening level health and environmental effects information and plans to develop needed data publicly available for high production volume (HPV) chemicals sponsored in the US HPV Challenge.	1,200	1,235
FY 2002	Same goal. Goal Met.	10% data (280 chemicals)	843 chemicals
FY 2001	EPA will make publicly available data from test plans submitted by industry or chemicals already in commerce. Goal Met. ***Performance Measure:*** Through chemical testing program, obtain test data for HPV chemicals on master testing list.	800	724 chemicals

FY 2004 Result: PMN submissions are not controlled by EPA, fluctuating from year to year, and do not reflect the program's success in meeting its goal of preventing introduction of new unreasonable risks associated with entry of new chemicals into commerce. Accordingly this measure will be tracked internally commencing in FY 2005 as an input to assessments of the PMN Review Program's efficiency, and replaced with an outcome measure tracking success in meeting the program's goal.

EPA has made substantial progress in the New Chemicals Program reviewing chemicals in commerce to assess risks and ensure controls are in place. At the end of FY 2004, 22.8% of all chemicals in commerce had been assessed for risks.

HPV Challenge Program: 2002-2004
Number of HPV Chemicals with Screening Sets of Data Publicly Available



EPA met the target of making screening level health and environmental effects data publicly available through the HPV website for 1,300 chemicals through 2004. With additional submissions from sponsors expected through the end of the calendar year, the Agency will be approaching completion of the initial data collection for the 1,494 chemicals sponsored by companies planning to submit their data to EPA, setting the stage for risk screening and priority setting for appropriate follow-up actions. The screening process allows EPA to prioritize chemicals in terms of hazard and risk.

EPA exceeded the FY 2004 target for receiving 40 PMN's per year that have been pre-screened by submitters using the full set of P2 Framework and PBT Profiler screening tools. This contributes to increased program efficiency due to the fact that pre-screened PMN submissions are less likely to require the full 90-day PMN review effort, lowering the cost per PMN review. The PMN process prevents the occurrence of new unreasonable human health and environmental risks associated with the entry of new chemicals into U.S. commerce.

The 2004 results will not be available until at least 2006. 2002 results will be available in the first quarter of FY 2005.

APG 4.5 Risks from Industrial/Commercial Chemicals *(continued)*	Planned	Actual

The Agency exceeded the FY 2004 target of 128 chemicals, as well as the 2008 target of 180 chemicals, with proposed Acute Exposure Guideline (AEGL) values. The program develops short-term exposure limits applicable for a wide range of extremely hazardous substances. Proposed AEGL values are used immediately by first responders in dealing with chemical emergencies, increasing EPA's ability to deal with threats of chemical terrorism and assist with homeland security preparations.

EPA significantly exceeded this measure, reflecting the strong progress being made by the international component of the HPV Challenge program to make SIDS available for all HPV chemicals. Industry sponsors of HPV chemicals are allowed to direct their submissions to either EPA, OECD SIDS or the International Council of Chemical Associations (ICCA). Through EPA's and ICCA's work with voluntary sponsors and EPA's work to issue TSCA Test Rules, the program goal is to make data publicly available on all 2,800 HPV chemicals by 2008.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, pages 36-38.

FY 2003 Result Available in FY 2004: EPA exceeded the target of making screening level health and environmental effects information publically available for 1,200 HPV chemicals. This is an initial step in committing the Agency to eliminate or effectively manage all identified significant risks associated with HPV chemicals.

APG 4.6 Chemical, Organism, and Pesticide Risks		Planned	Actual
FY 2004	Standardization and validation of screening assays. Goal Not Met.	11	0

FY 2004 Result: In its projection for FY 2004, EPA stated that it would complete the validation of 11 Tier 1 assays. Substantial scientific issues and difficulties arose unexpectedly during validation that impeded EPA's ability to meet this goal. In order to provide more meaningful measures, the Agency will track progress through each stage of the process, rather than reporting only the end product. EDSP has developed five new measures for FY 2006 which include: Detailed Review Papers Completed, Prevalidation Studies Completed, Validation Studies Completed, Peer Reviews, and Assays Ready for Use.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, pages 38-39.

APG 4.7 Chemical, Organism, and Pesticide Risks		Planned	Actual
FY 2004	Reduce wildlife incidents and mortalities. Goal Not Met. *Performance Measure:* Number of incidents and mortalities to terrestrial and aquatic wildlife caused by the 15 pesticides responsible for the greatest mortality to such wildlife (cumulative).	-25%	Insufficient data for analysis
FY 2003	Reduce public and ecosystem risk from pesticides. Goal Not Met. *Performance Measure:* Number of incidents and mortalities to terrestrial and aquatic wildlife caused by the 15 pesticides responsible for the greatest mortality to such wildlife (cumulative).	-20%	9%
FY 2002	Implementation of 10-15 additional model agricultural partnership projects that demonstrate and facilitate the adoption of farm management decisions and practices that provide growers with a "reasonable transition" away from the highest risk pesticides. Goal Met.	10-15	12

FY 2004 Result: The data received during FY 2004 was reviewed and found insufficient to provide a meaningful analysis. A cooperative agreement is being awarded to the American Bird Conservancy for the development of a database (American Incident Monitoring System-AIMS) in order to collect more meaningful information on avian mortalities to develop a more effective measure.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 39.

APG 4.8 Chemical, Organism, and Pesticide Risks		Planned	Actual
FY 2004	Protect human health, communities, and ecosystems from chemical risks and releases through facility risk reduction efforts and building community infrastructures.		
	Performance Measure:		
	Risk management plan audits completed.	400	Data avail 2005

FY 2004 Result: Although data will not be available until the first quarter of FY 2005, EPA expects to meet or exceed this target. The RMP program is currently ahead of projections for the FY 2008 goal. Currently, there are approximately 14,400 Risk Management Plans (RMPs) in the RMP database. Each year, since the RMP program began in 1999, EPA's goal is to complete on-site audits of 3% of those facilities in order to determine the completeness and accuracy of the RMP, understand the various processes used in chemical facilities, review the policies, procedures, and processes in place to prevent chemical accidents, and learn from accidents and follow-up actions at RMP facilities. This activity assists EPA in understanding techniques and technology currently used in chemical facilities to prevent chemical accidents and share those with chemical facilities throughout the United States and, in some cases, with other countries. EPA is working toward identifying measures for RMP audits to gain a more complete understanding of improvements in chemical safety resulting from the Risk Management Plan program.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 39.

Strategic Objective: Sustain, clean up, and restore communities and the ecological systems that support them. FY 2004 Cost (in thousands): $187,969 (16.4% of FY 2004 Goal 4 Total Costs)

Progress Toward Strategic Objective: In FY 2004 EPA made significant progress towards its goal to sustain, cleanup, and restore communities and the ecological systems that support them. Recent available data show that EPA grantees have assessed 4,880 brownfields properties which enabled the leveraging of $6.6 billion in clean up and redevelopment funding and 29,600 jobs. EPA has also conducted 1,167 targeted brownfields assessments from 1995 through March 2004. Additionally, adequate drinking water supply and wastewater treatment systems were provided for an additional 291,000 people in the U.S.-Mexico Border area by EPA funding assistance through the Border Environment Cooperation Commission and North American Development Bank. To date, systems have been provided for 1,163,000 people or 117% of the target for FY 2004. EPA is on track to meet the 2005 goal of providing adequate drinking water supply and wastewater treatment systems to 1.5 million people. Additionally, EPA conducted 50 training sessions for 10,000 farm workers on pesticide risks and safe handling, including minimizing risks to families and children.

APG 4.9 Assess and Cleanup Brownfields		Planned	Actual
FY 2004	Assess, cleanup, and promote the reuse of Brownfields properties, leveraging cleanup and redevelopment funding and jobs. Leverage or generate funds through revitalization efforts.		
	Performance Measures:		
	—Brownfields cleanup grants awarded.	25	75
	—Brownfield properties assessed.	1,000	Data avail 2005
	—Properties cleaned up using Brownfields funding.	no target	Data avail 2005
	—Brownfield property acres available for reuse or continued use.	no target	Data avail 2005
	—Jobs generated from Brownfields activities (annual).	2,000	Data avail 2005
	—Percentage of Brownfields job training trainees placed.	65	Data avail 2005
	—Amount of cleanup and redevelopment funds leveraged at Brownfields sites.	$0.9B	Data avail 2005

APG 4.9 Assess and Cleanup Brownfields *(continued)*		Planned	Actual
FY 2003	Assess, cleanup, and promote the reuse of Brownfields properties, leveraging cleanup and redevelopment funding and jobs. Leverage or generate funds through revitalization efforts. Goal Met.		
	Performance Measures:		
	—Amount of cleanup and redevelopment funds leveraged at Brownfields sites.	$0.9B	$1.49B
	—Number of Brownfield properties assessed.	1,000	1,052
	—Jobs generated from Brownfields activities (annual).	2,000	5,023
	—Percentage of Brownfields job trainees placed.	65%	62%
FY 2002	EPA will provide additional site assessment funding to 38 new communities, and to 38 existing communities, resulting in a cumulative total of 3,100 properties assessed, the generation of 19,300 jobs, and the leveraging of $4.0 B in cleanup and redevelopment funds since 1995. Goal Met.	3,100 19,300 $4.0B	3,807 21,737 $4.8B
FY 2001	Same goal, different targets. Goal Met.	2,500 properties 12,000 jobs $3.1B	2,754 17,307 $3.7B

FY 2004 Result: In FY 2004, the Brownfields Program awarded 75 Clean up Grants. Due to the grant recipient reporting cycle, the Program will not have complete FY 2004 performance data until March 2005. EPA anticipates that it will meet the FY 2005 performance targets.

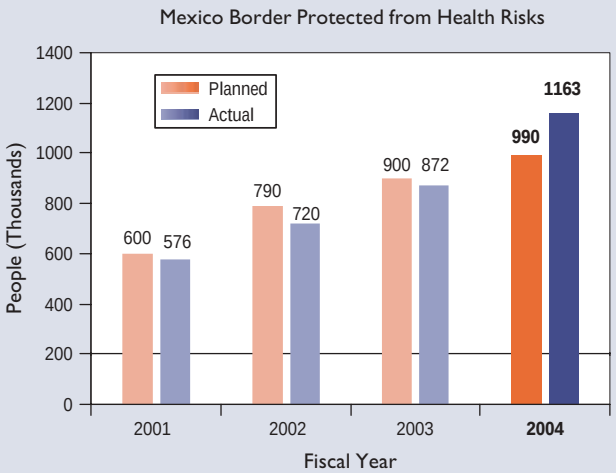
A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 40-41.

FY 2003 Result Available in FY 2004: In FY 2003 Brownfields grantees reported assessing 1,052 brownfields properties, leveraging 5,023 cleanup and redevelopment jobs and $1.49 billion in cleanup and redevelopment funding. Brownfields Job Training Grant Recipients placed 62% (meeting 96% of the target) of the program graduates into jobs. This slight miss has no effect on overall program or activity performance.

APG 4.10 US–Mexico Border Water/Wastewater Infrastructure		Planned	Actual
FY 2004	**Increase the number of residents in the Mexico border area who are protected from health risks, beach pollution, and damaged ecosystems from nonexistent and failing water and wastewater treatment infrastructure by providing improved water and wastewater service.** Goal Met.		
	Performance Measure:		
	Number of additional people in Mexico border area protected from health risks because of adequate water and wastewater sanitation systems funded through border environmental infrastructure funding.	**990,000**	**1,163,000**

FY 2004 Result: In FY 2004 adequate drinking water supply and wastewater treatment systems were provided for an additional 291,000 people in the U.S.-Mexico Border area by EPA funding assistance through the Border Environment Cooperation Commission and North American Development Bank. To date, systems have been provided for 1,163,000 people or 117% of the target for FY 2004. This effort requires considerable coordination among 6 Mexican and 4 U.S. states, municipalities with varying capacity, and 2 international organizations that certify the projects and issue subgrants for individual projects.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 41.



APG 4.11 Mexico Border Outreach		Planned	Actual
FY 2004	Protect the public health and the environment in the US-Mexico border region. Goal Met.		
	Performance Measures:		
	—Increase number of people with adequate water and wastewater sanitation systems.	990,000	1,163,000
	—Train farmworkers on pesticide risks and safe handling, including ways of minimizing families' and children's risks.	50 sessions	50 sessions

FY 2004 Result: The FY 2004 previously reported planned target of $1.5 million was in error and should have been 990,000. The cumulative target of 1.5 million is planned for the end of FY2005. The interim target for FY 2004 was 990,000. Projects in FY 2005 are intended to allow access to safe drinking water and wastewater sanitation systems to the remaining approximately 337 thousand people. At the end of FY2004, 78% of the FY 2005 target has been met. Additionally 50 training sessions have been held for approximately 10,000 farmworkers on pesticides handling.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, pages 40-41.

APG 4.12 Enhanced Institutional Capabilities		Planned	Actual
FY 2004	Enhance environmental management and institutional capabilities in priority countries. Goal Met.		
	Performance Measures:		
	—Assist in the development or implementation of improved environmental laws or regulations in priority countries.	1 country	1 country
	—Increase the transfer of environmental best practices among the United States and its partner countries and build the capacity of developing countries to collect, analyze, or disseminate environmental data.	3 countries	6 countries
FY 2003	Same Goal, different targets. Goal Met.		
	Performance Measures:		
	—Assist in the development or implementation of improved environmental laws or regulations in priority countries.	1 country	1 country
	—Increase the transfer of environmental best practices among the United States and its partner countries and build the capacity of developing countries to collect, analyze, or disseminate environmental data.	3 countries	3 countries
	—Increase the capacity of programs in Africa or Latin America to address safe drinking water quality issues.	1 country	1 country
FY 2002	Same Goal, different targets. Goal Met.	2 3 3	2 3 3
FY 2001	Same Goal, different targets. Goal Met.		
	Performance Measures:		
	—Number of countries or localities (3) that have adopted new or strengthened environmental laws and policies.	3	3
	—Number of organizations (3) that have increased environmental planning, analysis, and enforcement capabilities.	3	3

APG 4.12 Enhanced Institutional Capabilities *(continued)*		Planned	Actual
FY 2001 *(continued)*	—Number of organizations (3) that have increased capabilities to generate and analyze environmental data and other information.	3	3
	—Number of organizations (3) that have increased public outreach and participation.	3	4
	—Number of targeted sectors (3) that have adopted cleaner production practices.	3	2
	—Number of cities (3) that have reduced mobile-source based ambient air pollution concentrations.	3	3

FY 2004 Result: In FY 2004, EPA worked with India's government officials to develop an emission inventory and source apportionment, impacting 3 million Indian citizens. Additionally, six countries (Mexico, Kazakhstan, India, Peru, Kenya, and Vietnam) were provided technical assistance that enhanced air quality and energy efficiency. For example, EPA's diesel retrofit project in Mexico City influenced Pemex, the national oil company to switch to low-sulfur fuel in Mexico City. When fully implemented, switching to low sulfur fuel in Mexico City will reduce exposures to about 25 million people, who live and work in Mexico City.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 40.

Strategic Objective: Protect, sustain, and restore the health of natural habitats and ecosystems. FY 2004 Cost (in thousands): $139,064 (12.2% of FY 2004 Goal 4 Total Costs)

Progress Toward Strategic Objective: EPA's ecosystem protection programs encompass a wide range of approaches that target specific at-risk regional areas, along with broader categories of threatened ecosystems such as estuaries and wetlands. Locally generated pollution, combined with pollution transported by rivers and streams and through air deposition, collects in these closed and semi-closed ecosystems, degrading them over time. EPA has exceeded its 2008 goal of protecting and restoring 250,000 acres of estuarine habitat. Since 2001, cumulatively 432,800 acres have been protected or restored, with more than 107,000 acres protected and/or restored in FY 2004.[16]

EPA also continues to make progress toward ecosystem protection and restoration in the Great Lakes, Chesapeake Bay, and the Gulf of Mexico. Fewer persistent toxics under the Great Lakes Binational Toxics Strategy were used and released. A key source of toxics was addressed via remediation of a record 975,000 cubic yards of contaminated sediment in 2003 and initiation of EPA's first Great Lakes Legacy Act project to clean up sediments in the Black Lagoon in Michigan. In the Gulf of Mexico, a total of 13,368 acres of coastal and marine habitats were restored or protected as of 2004, exceeding the target in FY 2004 and contributing to the 10-year goal of 20,000 acres. In the Chesapeake Bay, 64,709 acres of submerged aquatic vegetation (SAV), an indicator of the health of the bay and important habitat for aquatic species, was reported in FY 2004. Though record wet weather events in 2003 deposited nutrient-laden sediments into the Chesapeake Bay and resulted in less acres of submerged aquatic vegetation (SAV) than anticipated, the extent of SAV continues to generally show a positive trend, with an increase of 26,709 acres from 1984 levels. EPA is making progress toward the 2010 goal of 185,000 acres of SAV in the Chesapeake Bay.

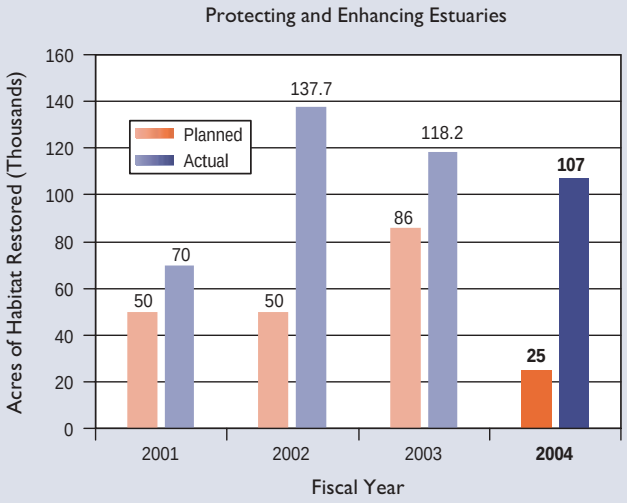
APG 4.13 Protecting and Enhancing Estuaries		Planned	Actual
FY 2004	Restore and protect estuaries through the implementation of Comprehensive Conservation and Management Plans (CCMPs). Goal Met.		
	Performance Measure:		
	Acres of habitat restored and protected nationwide as part of the National Estuary Program (annual).	25,000	107,000

APG 4.13 Protecting and Enhancing Estuaries *(continued)*

Planned | Actual

FY 2004 Result: The National Estuary Program significantly exceeded this year's goal, reflecting the continuing emphasis by NEPs on key components of their CCMPs relating to coastal habitat. The target was exceeded due to several factors including increased community interest and involvement in protection and restoration as well as the enhanced capacity of EPA and its partners to collect and report on data depicting protection and restoration achievements. In addition, it is difficult to predict precisely to what extent NEPs will choose to address habitat preservation in their annual workplans.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, pages 41-42.



APG 4.14 Great Lakes: Ecosystem Assessment

		Planned	Actual
FY 2004	Great Lakes ecosystem components will improve, including progress on fish contaminants, beach closures, air toxics, and trophic status. Goal Not Met.		
	Performance Measures:		
	—Long-term concentration trends of toxics (PCBs) in Great Lakes top predator fish.	5%	Data avail FY 2005
	—Long-term concentration trends of toxic chemicals in the air.	7%	Data avail FY 2005
	—Total phosphorus concentrations (long-term, Ug/l) in the Lake Erie Central Basin.	10	21.2 Ug/l
FY 2003	Same Goal, different targets. Goal Not Met.		
	Performance Measures:		
	—Long-term concentration trends of toxics (PCBs) in Great Lakes top predator fish.	5%	Data avail FY 2005
	—Long-term concentration trends of toxic chemicals in the air.	7%	Data avail FY 2005
	—Total phosphorus concentrations (long-term, Ug/l) in the Lake Erie Central Basin.	10	18.4
FY 2002	Same goal, different targets. Goal Not Met.		
	Performance Measures:		
	—Long-term concentration trends of toxics (PCBs) in Great Lakes top predator fish.	declining	declining
	—Long-term concentration trends of toxic chemicals in the air.	declining	declining
	—Total phosphorus concentrations (long-term, Ug/l) in the Lake Erie Central Basin.	improving	mixed

APG 4.14 Great Lakes: Ecosystem Assessment *(continued)*		Planned	Actual
FY 2001	Great Lakes ecosystem components will improve, including progress on fish contaminants, beach closures, air toxics, and trophic status. Goal Met.		
	Performance Measures:		
	—Concentration trends of toxics (PCBs) in Great Lakes top predator fish.	declining	uncertain
	—Concentration trends of toxic chemicals in the air.	declining	declining
	—Trophic status and phosphorous concentrations in the Great Lakes.	improving	improving

FY 2004 Result: The data for the measures regarding toxics concentrations in fish and air will not be available until the second quarter of FY 2005. The phosphorus concentration target was not met, this is discussed in detail below.

PCB concentrations in predator fish are tracked because it is a prime indicator of whether contaminant levels in the Great Lakes are decreasing, increasing, or staying level. Data are available from 1972. Monitoring results from 2002 were planned to be reported in 2004. However, quality assurance problems continue to delay reporting on PCB concentrations in top-predator fish. EPA is providing contractor assistance and has conducted a site visit to assist with resolution of the problems. It is anticipated that quality assured data will be available in FY 2005. Historical trends suggest the concentration level will be less than 2 parts per million (the FDA Action level) for the reporting year 2004 (sample year 2002), but far above the Great Lakes Initiative target or levels at which fish advisories can be removed. Year-to-year variations are expected and will influence the long-term trend, making it difficult to see statistically significant trends on a year-to-year basis.

Atmospheric deposition has been shown to be a significant source of pollutants to the Great Lakes. Atmospheric deposition data are available for this measure beginning in 1990 collected through the joint US/Canadian Integrated Atmospheric Deposition Program and includes PCBs, PAHs, and pesticides. Monitoring results from 2002 were planned to be reported in 2004. However, although United States atmospheric deposition data are available through 2002 to calculate annual decline in PCBs (Lake Erie 7%, Lake Michigan 10%, Lake Superior 3.6%, which averages approximately 7%), Canadian reporting for atmospheric deposition in Lakes Huron and Ontario, which is anticipated in 2005, needs to be aggregated with the U.S. data in order to determine FY 2004 performance. Targets for FY 2005 and FY 2008 are 7% and 30% annual decline, respectively, and historical trends suggest that trends will continue to decline. For instance, depending on the lake, PCB concentrations could be expected to range from 50 to 250 pg/m3 (picograms per cubic meter). Year-to-year variations are expected and will influence the long-term trend, making it difficult to see statistically significant trends on a year-to-year basis. Success will require participation in the Great Lakes Strategy, State of the Lakes Ecosystem Conferences, Lakewide Management Plans, and Remedial Action Plans.

Phosphorus concentrations in Lake Erie have been tracked since 1983. Results from monitoring in 2003 are reported in 2004 and at 21.2 ug/Liter are at a concentration approximately twice the target of 10 ug/Liter. The Lake Erie Central Basin is the focus of this measure because Lake Erie exceeded phosphorus guideline levels in recent years and because its central basin is most representative of Lake Erie's anoxia problems. The Lake Erie phosphorus problem is linked to the increased "dead zone," or zone of limited dissolved oxygen which is the subject of an ongoing EPA-led study. EPA expects to issue the final report in FY 2005. Causes and management implications are still being determined; however, invasive species, especially zebra and quagga mussels, appear to be a factor. As a result of discussions with scientists from Environment Canada in 2003 and 2004, the Canadian government has extended the study of Lake Erie through 2004. Canadian efforts are focused on areas which complement the ongoing EPA-led study and include estimates of zebra and quagga populations and water movement in Lake Erie. For further information on Great Lakes indicators see http://www.epa.gov/glnpo/glindicators/.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 42.

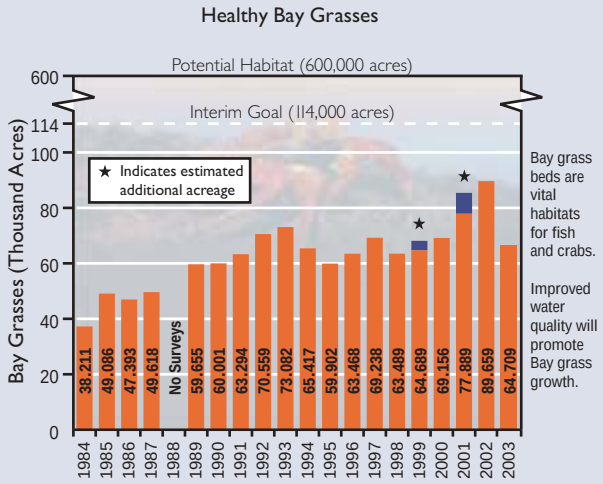
FY 2003 Result Available in FY 2004: The data for the measures regarding toxics concentrations in fish will not be available until the second quarter of FY 2005. Quality assurance problems continue to delay reporting on PCB concentrations in top predator fish. EPA is providing contractor assistance and it is anticipated that quality assured data will be available in FY 2005.

The data for the measures regarding long-term concentration trends of toxic chemicals in the air will not be available until FY 2005 Although United States data is available for 2001 and 2002 to calculate annual decline in PCBs in atmospheric deposition, Canadian reporting for atmospheric deposition in Lakes Huron and Ontario, which is anticipated in 2005, needs to be aggregated with the U.S. data in order to determine FY 2003 results. The U.S. data for 2001, which EPA had planned to report in 2003, shows the following declines: Lake Erie 7.1%, Lake Michigan 10.5%, Lake Superior 4%, which averages approximately 7% overall. EPA continues to discuss the Canadian lag time for this data with Canada.

APG 4.15 Chesapeake Bay Habitat		Planned	Actual
FY 2004	Improve habitat in the Chesapeake Bay. Goal Not Met.		
	Performance Measure:		
	Acres of submerged aquatic vegetation present in the Chesapeake Bay (cumulative).	90,000	64,709

FY 2004 Result: While acreage estimates fluctuate year to year, data generally show a slow, steady increase from 38,000 acres in 1984 to nearly 90,000 acres in 2002 as reported in FY 2003. (SAV data is collected from April through October of a given year, then data go through QA/QC from October through April, i.e. the FY 2004 Result derives from an April through October 2003 sampling period). However, record wet weather in 2003 washed massive amounts of nutrients and sediment into the Bay, which resulted in a 30% decline in SAV in a single year. Chesapeake Bay Program partners will increase efforts to reduce nutrient and sediment pollution to achieve the 185,000 acre goal by 2010.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 42.



APG 4.16 Gulf of Mexico		Planned	Actual
FY 2004	Assist the Gulf States in implementing watershed restoration actions in 71 (5-year rolling average) priority impaired coastal river and estuary segments. Goal Met.	71	71.2
FY 2003	Same Goal, different target. Goal Met.	14	95

FY 2004 Result: In FY 2000, the Agency established, through consensus with the Gulf States, a strategic performance target to focus the program's collaborative capacity towards helping the states address and correct water quality issues impacting 20% of the impaired waters contained in coastal watersheds bordering the Gulf of Mexico. The 20% target represents 71 of the 354 segments listed by the states 1998 303(d) report. The strategy allowed the states to incrementally ramp up to the 20% target over the 5-year period from 2000-2004. To accomplish this, the Agency, in cooperation with the states, set target increments of 14 segments per year (FYs 2000-2003) and, 15 in FY 2004.

Through the implementation of this strategy, the Agency achieved its "71 segment rolling average" as originally targeted in FY 2004 and as outlined below:

Fiscal Year	Annual Target Increments (Segments)	Cumulative Target (Segments)	Actual Annual Program Performance (Segments)	Rolling Average Target (i.e., "71 by 2004") (Segments)
2000	14	14	32	32
2001	14	28	31	32
2002	14	42	35	33
2003	14	56	95	48
2004	15	71	163	71

Leading this process, the Gulf States have identified the priority impaired waterbody segments sub-population that will serve to further focus the program's restoration assistance efforts through 2008. Beginning in FY 2005, and carrying through FY 2008, the program's goal will be to sustain assistance in 71 segments in order to achieve the overall 2008 performance goal of 20% priority impaired waters restoration.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, pages 42-43.

Strategic Objective: Through 2008, provide a sound scientific foundation for EPA's goal of protecting, sustaining, and restoring the health of people, communities, and ecosystems by conducting leading-edge research and developing better understanding and characterization of environmental outcomes under Goal 4. FY 2004 Cost (in thousands): $398,586 (34.9% of FY 2004 Goal 4 Total Costs)

Progress Toward Strategic Objective: EPA is on track to meet this objective. EPA's cutting-edge research provides the scientific basis for determining the status of and protecting the health of the Nation's people, communities, and ecosystems. In addition to providing an innovative method for determining the biological integrity of fish communities, EPA also assessed the accuracy of important data used throughout the Agency to measure environmental improvements and found that it meets accuracy standards. National Land Cover Data (NLCD) is the most widely-used land-cover data across EPA, with approximately 30% of the indicators used in EPA's Report on the Environment based on NLCD. A thematic accuracy assessment of these data, never undertaken prior to this effort that was completed in 2004, shows that these data meet accuracy standards[17]. EPA also provided important information on best management practices for controlling amounts of nitrogen and phosphorous, nutrients that can result in eutrophication (an overabundance of algae that blocks light and uses up oxygen). This information will assist states in meeting Total Maximum Daily Load (TMDL) requirements for nutrients. EPA has also made significant strides in the area of protecting children's health. Research completed in 2004 includes an emission model for estimating inhalation exposure of children to cleaning products used in schools, and a report on the long-term developmental effects of dioxin exposure during pregnancy.[18]

APG 4.17 Regional Scale Ecosystem Assessment Methods		Planned	Actual
FY 2004	Provide federal, state, and local resource managers with a means to more effectively determine long-term trends in the condition and vitality of Eastern U.S. stream ecosystems through measurements of changes in the genetic diversity of stream fish populations. Goal Met.		
	Performance Measure: A study of fish genetic diversity that demonstrates the power of this modern approach for evaluating condition and vitality of biotic communities to federal, state and local resource managers.	1 report	1 report

FY 2004 Result: The development and application of new and more powerful methods to evaluate ecological integrity is central to many state and Federal assessment programs. Technological progress in the fields of molecular biology and genetics has allowed, for the first time, the cost-effective analysis of patterns in the genetic diversity of aquatic populations over large regional scales. This genetic information brings new and powerful information to our understanding of aquatic ecosystems, including the identification of appropriate ecological assessment units, the linkages between environmental condition and population responses, and estimates of the future susceptibility of populations due to loss of genetic diversity. In FY 2004, EPA summarized the results of research on the genetic diversity of indicator fish species inhabiting wadeable streams in the Mid-Atlantic, as well as in parts of Ohio. The report found that genetic diversity of stream fish was reduced in areas of poor environmental quality. This loss of genetic diversity is likely to impact the ability of fish in these areas to respond to future environmental challenges. In addition, genetic identification provides a more precise and less subjective method for identifying species than methods based on physical characteristics. This report will provide resource managers and the public with a more complete understanding of the present condition of these biological resources and their vulnerability to predicted environmental changes.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 43.

APG 4.18 Homeland Security Research		Planned	Actual
FY 2004	Provide a database of EPA experts on topics of importance to assessing the health and ecological impacts of actions taken against homeland security that is available to key EPA staff and managers who might be called upon to rapidly assess the impacts of a significant terrorist event. Goal Met.		

APG 4.18 Homeland Security Research *(continued)*		Planned	Actual
FY 2004 *(continued)*	*Performance Measure:* A restricted access database of EPA experts with knowledge, expertise, and experience for use by EPA to rapidly assess health and ecological impacts focused on safe buildings and water security.	1 database	1 database

FY 2004 Result: This restricted access database has been distributed to key EPA staff and managers, and is updated quarterly. It will facilitate rapid deployment in response to an incident.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 43.

APG 4.19 Homeland Security Research		Planned	Actual
FY 2004	Provide to building owners, facility managers, and others, methods, guidance documents, and technologies to enhance safety in large buildings and to mitigate adverse effects of the purposeful introduction of hazardous chemical or biological materials into indoor air. Goal Met.		
	Performance Measures:		
	—Prepare Environmental Technology Verification (ETV) evaluations on at least 5 new technologies for detection, containment, or decontamination of chemical/biological contaminants in buildings to help workers select safe alternatives.	5	10
	—Through Small Business Innovative Research awards, support at least 3 new technologies/methods to decontaminate heating, ventilation, and air conditioning systems in smaller commercial buildings or decontaminate valuable or irreplaceable materials.	3	4
	—Prepare technical guidance for building owners and facility managers on methods/strategies to minimize damage to buildings from intentional introduction of biological/chemical contaminants.	9/30/04	9/30/04

FY 2004 Result: Anthrax contamination and the extensive clean-up efforts in postal facilities and several other government and commercial buildings emphasized the need for improved methods to enhance security against terrorist activities in buildings and to provide additional options for cleaning up buildings. EPA is focusing on research, development, testing, and communication of enhanced methods for detection and containment of biological and chemical warfare agents and toxic industrial chemicals intentionally introduced into large buildings. Research is also addressing decontamination of building surfaces, furnishings, and equipment with safe disposal of residual materials. In FY 2004, EPA provided emergency responders, building owners and managers, and decontamination crews with information, including guidance documents and technology evaluations, needed to enhance safety in buildings and to mitigate adverse effects of the purposeful introduction of hazardous chemicals or biological materials into indoor air.[19]

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 43.

APG 4.20 Homeland Security Research		Planned	Actual
FY 2004	Verify two point-of-use drinking water technologies that treat intentionally introduced contaminants in drinking water supplies for application by commercial and residential users, water supply utilities, and public officials. Goal Met.	2	2

APG 4.20 Homeland Security Research *(continued)*	Planned	Actual

FY 2004 Result: Evaluations of point-of-use drinking water treatment technologies have been ongoing for years and technologies are commercially available to remove disagreeable tastes and odors, and capture or neutralize contaminants. These point-of-use treatment technologies are now being considered as an additional means of treating water that may have been exposed to biological or chemical contaminants through terrorist attacks. In FY 2004, EPA's Environmental Technology Verification (ETV) program formally verified such technologies using a standard protocol developed by a group of critical stakeholders. This additional line of defense can help reassure home and building owners and users, water supply utilities, and public officials that the drinking water supply in a residential or commercial building can be treated again once it enters the water distribution system of a building.[20]

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 43.

APG 4.21 Risk Assessment Research		Planned	Actual
FY 2004	Through FY 2005 initiate or submit to external review 28 human health assessments and complete 12 human health assessments through the Integrated Risk Information System (IRIS). This information will improve EPA's and other decision-makers' ability to protect the public from harmful chemical exposure. Goal Met.		
	Performance Measures:		
	—Complete 4 human health assessments and publish their results on the IRIS website[21].	4	4
	—Initiate or submit to external peer review human health assessments of at least 20 high priority chemicals.	20	20

FY 2004 Result: The Integrated Risk Information System (IRIS) is an EPA data base containing Agency consensus scientific positions on potential adverse human health effects that may result from exposure to chemical substances found in the environment. IRIS currently provides information on health effects associated with chronic exposure to more than 500 specific chemical substances. IRIS contains chemical-specific summaries of qualitative and quantitative health information in support of the first two steps of the risk assessment process, i.e., hazard identification and dose-response evaluation. Combined with specific situational exposure assessment information, the information in IRIS may be used as a source in evaluating potential public health risks from environmental contaminants. IRIS is widely used in risk assessments for EPA regulatory programs and site-specific decision making. Updating IRIS with new scientific information is critical to maintaining information quality and providing decision makers with a credible source of health effects information. The health assessments completed and initiated in FY 2004 will provide EPA and other decision makers with needed updates to IRIS so they can make informed decisions on how to best protect the public from harmful chemical exposure. In 2004, EPA completed human health assessments on four chemicals (2-methylnaphthalene, lead, boron, and ethylene dibromide) and has posted these on the IRIS web site. In FY 2005, EPA will complete an additional 8 assessments and initiate 8 more for a two year total of 28 initiated assessments and 12 completed health assessments.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 43.

APG 4.22 Computational Toxicology		Planned	Actual
FY 2004	Develop a computation toxicology research strategy (strategic framework) that provides the framework for research that will help fill major data gaps for a large number of chemical testing programs and reduce the cost and use of animal testing. Goal Met.		
	Performance Measure:		
	Produce a computational toxicology research strategic framework.	1 strategy	1 strategy

FY 2004 Result: In FY 2004, EPA completed "A Framework for a Computational Toxicology Research Program in ORD."[22] This document identifies the major research gaps and approaches for the development of an EPA program on computational toxicology. The objective of the Computational Toxicology research program is to integrate modern computing and information technology with

APG 4.22 Computational Toxicology *(continued)*	Planned	Actual

molecular biology to improve the Agency's prioritization of data requirements and risk assessment of chemicals. The ultimate goal of the program is to demonstrate the feasibility of setting mechanistically-based priorities for chemical risk assessment and to optimize testing requirements through the use of computational methods and molecular profiling afforded by the advances in emerging technologies such as proteomics and genomics.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 43.

APG 4.23 Human Health Risk Assessment Research	Planned	Actual
FY 2004		
Contribute to protecting children from harmful environmental agents in their daily lives by providing risk assessors and managers with better data on children's aggregate exposures in their home and daycare settings. Goal Met.		
Performance Measure:		
Analysis of the "Children Total Exposure to Pesticides and Persistent Organic Pollutants (including EDCs) Study" to estimate aggregate exposures and identify critical exposure factors that can be used by the Agency to improve exposure and risk assessments.	1	1

FY 2004 Result: In FY 2004, EPA completed a report for Congress on the aggregate exposures of preschool children to pollutants commonly found in their everyday environments. Current risk assessments for children are severely hampered by a lack of exposure data and by exposure factors that are insufficient to describe how exposures change as children grow up and change their activities. The report found that the relative contribution of the various exposure pathways (the air kids breathe, the food and drink kids consume, or the things that they touch) varies from chemical to chemical. For the more than 50 chemicals studied, the dietary pathway was often the most significant pathway for exposure. The updated exposure factors are more reliable since they incorporate more complete and better data and approaches to describe children's exposures to environmental pollutants. These data and factors should significantly improve the reliability of the estimates of children's exposure and risk used by regulatory decision-makers throughout EPA.

A description of the quality of the data used to measure EPA's performance can be found in Appendix B, page 43.

ASSESSMENT OF IMPACTS OF FY 2004 PERFORMANCE ON FY 2005 ANNUAL PLAN

Based on the results of FY 2004 performance, adjustments will be made to three FY 2005 performance measure targets. The first is reducing wildlife incidents and mortalities which will be reduced from a cumulative total of 27% to 12% for FY 2005. These targets have been missed for the prior 2 years so the FY 2005 change is necessary to account for that reality.

The second measure which will be changed for FY 2005 is the occurrence of residues on a core set of 19 foods eaten by children relative to occurrence levels for those foods reported in 1994-1996. After 2 years of experience in analyzing the data, the measure has been determined to be too general with too many variables from year to year in order to provide a consistent, reliable trend. Information is being reviewed to determine a more appropriate measure.

The final measure which will be changed for FY 2005 is the safe disposal of capacitors. CY 2002 results released in January of 2004 show a total of 2,204 large capacitors safely disposed, compared to 9,494 in CY 2001. CY 2004 results will not be released until 2006. The FY 2004 annual performance target is 6,000 large capacitors safely disposed and the FY 2005 annual performance target increases that number to 9000. Due to the downward industrial disposal trend in CY 2002, data quality issues are being investigated and depending on findings, the FY 2005 performance target may need to be adjusted.

Prior Year Annual Performance Goals Without Corresponding FY 2004 Goals

(Actual performance data available in FY 2004 and beyond)

FY 2000	Administer federal programs and oversee state implementation of programs for lead-based paint abatement certification and training in 50 states, to reduce exposure to lead-based paint and ensure significant decreases in children's blood levels by 2005.	target year is FY 2005
FY 1999	Complete the building of a lead-based paint abatement certification and training in 50 states, to ensure significant decreases in children's blood levels by 2005 through reduced exposure to lead-based paint.	target year is FY 2005
FY 1999	Develop and verify innovative methods and models for assessing the susceptibilities of population to environmental agents, aimed at enhancing risk assessment and management strategies and guidelines.	target year is FY 2008

FY 2003 Annual Performance Goals

(No Longer Reported for FY 2004)

- Reduce public and ecosystem risk from pesticides.
- Provide the public with a reliable and statistically valid baseline for the condition of nation's estuaries against which to measure the success of ecosystem protection and risk management practices.

Notes

1 U.S. Environmental Protection Agency, Office of Pollution Prevention and Toxics. "TSCA New Chemicals Program." Internal monthly report by Chemical Abstract Services.

2 For more information, please visit: http://www.epa.gov/Region9/cross_pr/childhealth/pbde.html.

3 U.S. Environmental Protection Agency, Office of Pollution Prevention and Toxics. "High Production Volume Challenge Program, HPV Commitment Tracking System." Available at http://www.epa.gov/chemrtk/viewsrch.htm.

4 Florida Department of Environmental Protection. 2003. *Integrating Atmospheric Mercury Deposition and Aquatic Cycling in the Florida Everglades: An approach for Conducting a Total Maximum Daily Load Analysis for an Atmospherically Derived Pollutant. Final Report*. Tallahassee, Florida. Available at ftp://ftp.dep.state.fl.us/pub/labs/assessment/mercury/tmdlreport03.pdf

5 Centers for Disease Control, National Center for Health Statistics. *National Health and Nutrition Examination Survey: 1999-2002*. More information is available at http://www.cdc.gov/nchs/nhanes.htm.

6 More information on the Executive Order is available at http://www.epa.gov/glnpo/taskforce.

7 More information is available at http://www.epa.gov/owow/estuaries/pivot/overview/intro.htm.

8 More information is available at http://www.whitehouse.gov/news/releases/2004/04/20040422-4.html.

9 More information is available at http://www.bmwusfactory.com/community/environment/gastoenergy.asp.

10 More information is available at http://www.unep.org/PCFV/Data/data.htm#leaded.

11 For more information, please visit: http://www.unipune.ernet.in/dept/env/pei/index.html.

12 For more information, please visit: http://www.epa.gov/indicators/roe/html/tsd/tsdHealth.htm#43.

13 For more information on EMAP, please visit: http://www.epa.gov/emap/.

14 *Arctic Pollution Issues: A State of the Arctic Environment Report*. Arctic Monitoring and Assessment Programme, 1997. ISBN 82-7655-060-6

15 U.S. Environmental Protection Agency, Office of Research and Development. 2004. *Water Security and Technical Support Action Plan*. EPA/600/R-04/063. Washington, DC: U.S. Government Printing Office.

16 The specific language for this strategic target reads as follows: "By 2008, working with National Estuary Program (NEP) partners, protect or restore an additional 250,000 acres of habitat within the study areas for the 28 estuaries that are part of the NEP."

17 U.S. Environmental Protection Agency, Office of Research and Development. Not yet published. *Thematic Accuracy of Multi-Resolution Land Characterization–National Land Cover Database Land Cover for the Western United States*.

18 Vorderstrasse, B, S.E Fenton., A.A Bohn., J.A.Cundiff, and B.P. Lawrence. 2004. "A novel effect of dioxin: exposure during pregnancy severely impairs mammary gland differentiation." Toxicol. Sci. (In Press).

Lawrence, B.P., B.A. Vordestrasse, S.E. Fenton, and A.A. Bohn. 2003. "Exposure to 2,3,7,8-tetrachlorodibenzo-p-diozin (TCDD) impairs Mammary Gland Differentiation in Pregnant c57Bl/6 Mice and Prevents Pup Survival." *Toxicologist* 72:230.

19 Information is available at http://www.epa.gov/etv/verifications/vcenter10-1.html and at http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/outlinks.sbir/rc_id/916/showYear/all

20 Information is available at http://www.epa.gov/etv/verifications/verification-index.html.

21 Information is available at http://www.epa.gov/iris.

22 U.S. Environmental Protection Agency. *Framework for a Computational Toxicology Research Program at ORD*. EPA-600/R-03/065. Information is available at http://www.epa.gov/comptox.